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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,070	07/14/2003	Nikolay Glushnev	GB920020068US1	6964
23550 7590 09/30/2008 HOFFMAN WARNICK LLC 75 STATE STREET 14TH FLOOR ALBANY, NY 12207				
EXAMINER WOZNIAK, JAMES S				
ART UNIT 2626		PAPER NUMBER		
NOTIFICATION DATE 09/30/2008		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOCommunications@hoffmanwarnick.com

# Office Action Summary

**Application No.**

10/619,070

**Applicant(s)**

GLUSHNEV ET AL.

**Examiner**

JAMES S. WOZNIAK

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 June 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-13 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 14 August 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/5508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. In response to the office action from 4/25/2008, the applicant has submitted an amendment, filed 6/20/2008, amending independent claims 5 and 9, while arguing to traverse the art rejection based on the limitation regarding a cut and paste code extended by a gloss code (*Amendment, Page 10*). Applicant's arguments have been fully considered, however the previous rejection is maintained due to the reasons listed below in the response to arguments.
2. In response to the amended specification that includes previously unreferenced drawings, the examiner has withdrawn the previous drawing objections.
3. Although claim 5 now includes a storing means for storing generated orthographic variations (*Amendment, Page 9*), the claim does not include structure for generating any type of output from real-world input data. In other words, the claim only recites a data structure without actually generating any type of “concrete, useful, and tangible result”. As such, claims 5-8 remain rejected under 35 U.S.C. 101 for being directed to non-statutory subject matter. In response to amended claim 9, which is now directed to a combination of a computer readable storage medium actively *encoded* with a program executable by a computer, the examiner has withdrawn the previous corresponding 35 U.S.C. 101 rejection.

***Response to Arguments***

4. Applicant's arguments have been fully considered but they are not persuasive for the following reasons:

With respect to the independent claims, the applicants argue that Kaplan et al (*U.S. Patent: 5,594,641*) fails to teach a cut and paste code extended by a gloss code because the tag codes taught by Kaplan merely teach lengthening of a given substring and do not show the cut and paste methodology involving how many characters should be cut and how many characters should be pasted (*Amendment, Page 10*).

In response, the examiner maintains that Kaplan does teach a cut and paste code extended by a gloss code. More specifically, Kaplan teaches the use of symbolic tag codes representative of orthographic variations of a base word stem (Col. 4, Line 19- Col. 5, Line 5). These tag codes indicate how many letters should subtracted and added to a base form to arrive at a particular dictionary term. For example, in the case of the "arrive" word stem, 1 letter, "e", is subtracted and 3 letters, "ing" are added to form "arriving" (*Figs. 10 and 11A*). In this example, the tag codes taught by Kaplan indicate a number of letters to subtract (1) and a number to add (3). Thus, Kaplan does teach a "cut and paste code extended by a gloss code".

The applicants further argue that Beesley et al ("*Draft: Finite-State Morphology: Xerox Tool and Techniques*," 1999) fails to teach a code for converting between upper and lower case because Beesley merely provides representation of a simple orthographic rule. In response, the examiner points out that Kaplan teaches that symbolic tags used in representing orthographic variations can include any language rule (*Col. 4, Lines 52-65*), but does not specifically teach the

upper-lower case conversion rule. Beesley, however, teaches this string-changing rule and its representation in tags in a finite state transducer (*Pages 23-24, Figs. 1.28-1.29*). Thus, since Kaplan teaches a means for incorporating any variation rules into a tag code and Beesley teaches a variation rule in the form of upper and lower case conversion, it is the combination of Kaplan and Beesley that teaches the aforementioned claim limitation.

For at least the above reasons, the applicants' arguments have been fully considered, but are not convincing.

The further dependent claims are traversed for reasons similar to the independent claims (*Amendment, Page 11*). In regards to such arguments, see the response directed towards the independent claims.

### ***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. **Claims 5-8** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

**Claim 5** is drawn to an abstract dictionary data structure stored in a computer. In order for a claimed invention to be considered statutory under 35 U.S.C. 101, it must be useful and accomplish a practical application. That is, it must produce a “useful, concrete and tangible result” (*State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02*). In the present case, claim 5 only represents a computer abstract dictionary data structure, which does not actively generate

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any type of result. As such, claim 5 and its dependents are directed to non-statutory subject matter.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1, 3, 5, 7, 9, 11, and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan et al (*U.S. Patent: 5,594,641*) in view of Beesley et al ("*Draft: Finite-State Morphology: Xerox Tool and Techniques*," 1999).

With respect to **Claims 1 and 5**, Kaplan discloses:

Obtaining orthographic variations of dictionary words (*receiving word stems and variations, Col. 4, Lines 19-39*);

Explicitly storing substantially all orthographic variations of words in a finite state transducer database (*word stems and all variations stored in a finite state transducer database, Col. 4, Line 19- Col. 5, Line 5*);

Generating and Storing, for each of the orthographic variations, a cut and paste code, which indicates how many character should be cut from the end of a surface form of a word and pasted to produce a particular variation (*stored coded mapping of variation rules merged into a lexical transducer and readable by a computer, wherein variations are cut and pasted onto a*

*stem form, Col. 4, Line 19- Col. 5, Line 5 and Col. 8, Line 59- Col. 9, Line 6; and Fig. 10-11a.; further tag codes that are indicative of a change in case between a stem and variant form, Col. 4, Line 40- Col. 5, Line 5; and example of case variation in a FST, Col. 7, Line 56- Col. 8, Line 13).*

Although Kaplan discloses cut and paste tag codes for word variations and further notes that multiple rules can be added together (Col. 5, Line 65- Col. 6, Line 10), Kaplan does not explicitly disclose a further code that indicates whether at least part of the orthographic variation should be converted between upper and lower case, however, Beesley recites such a orthographic variation rule (*Pages 23-24; Figures 1.28-1.29*).

Kaplan and Beesley are analogous art because they are from a similar field of endeavor in linguistic analysis. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Kaplan with the lower/upper case conversion rule in order to further encode other important word variants for text indexing and retrieval (*Kaplan, Col. 4, Lines 11-18 and 51-64*).

With respect to **Claims 3, 7, and 11**, Kaplan discloses the tag code indicative of a change of case of any letter in a word sequence as applied to claim 1, thus it would be inherent within the scope of the teachings of Kaplan that a tag code would indicate the conversion of a first character to lower or upper case, especially in determining a relation between a dictionary term and a capitalized first word in a query sentence when the created dictionary is utilized in an information retrieval system (*Col. 9, Lines 19-53*).

With respect to **Claim 9**, Kaplan discloses the method for producing a lexical transducer as applied to claim 1 as implemented as a program stored on a computer readable medium (*Col. 7, Lines 46-55*).

With respect to **Claim 13**, Kaplan shows a single orthographic variation segment indicating a plurality of root words (*Fig. 11A*).

9. **Claims 2, 6, and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan et al in view of Beesley et al and further in view of Lee et al (*U.S. Patent: 4,939,639*).

With respect to **Claims 2, 6, and 10**, Kaplan in view of Beesley discloses the method for generating a lexical transducer as applied to Claim 1. Kaplan in view of Beesley does not specifically suggest form variation between single and double character sequences, however Lee recites a linguistic dictionary that indicates corresponding single and double character sequences (*Col. 10, Line 55- Col. 11, Line 6*).

Kaplan, Beesley, and Lee are analogous art because they are from a similar field of endeavor in linguistic dictionary processing. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Kaplan in view of Beesley with the correlation of related single and double character sequences taught by Lee in order to provide a means for transliteration for characters that do not appear in a user's language (*Lee, Col. 10, Lines 43-54*).

10. **Claims 4, 8, and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan et al in view of Beesley et al and further in view of Schabes et al (*U.S. Patent: 6,424,983*).



With respect to **Claims 4, 8, and 12**, Kaplan in view of Beesley discloses the method for generating a lexical transducer as applied to Claim 1. Kaplan in view of Beesley does not specifically suggest storing composite word forms having unaccented characters and storing expanded word forms having the base letter form and an accent mark, however Schabes discloses a lexicon utilizing a finite state machine that associates words without accents (composite form) with alternative word forms having the base letters and accent marks (expanded form) (*Col. 21, Line 66- Col. 22, Line 30*).

Kaplan, Beesley, and Schabes are analogous art because they are from a similar field of endeavor in linguistic dictionary processing. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Kaplan in view of Beesley with the concept of incorporating accent data into a lexicon as taught by Schabes in order to enable dictionary use in a non-English language context (*Schabes, Col. 22, Lines 17-21*).

### ***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached at (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/James S. Wozniak/  
Patent Examiner, Art Unit 2626